UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,865	11/02/2001	Anuj Batra	TI-32769	7454

7590 03/08/2006

Dennis Moore
Texas Instruments Incorporated
M/S 3999
P.O. Box 655474
Dallas, TX 75265

EXAMINER	
WANG, TED M	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/003,865	BATRA ET AL.	
	Examiner	Art Unit	
	Ted M. Wang	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/20/2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-20* is/are allowed.

6)☐ Claim(s) *1-3, 5-13 and 16* is/are rejected.

7)☒ Claim(s) *4,14 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed on 12/20/2005, with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5-13 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Mansfield (US 6,704,346).

- With regard claim 1, Mansfield discloses a method of intelligent frequency hopping, comprising:

  generating a good window and a bad window (column 3 lines 10-39 and column 7 lines 34-46, Table 2A-2C, column 9 lines 23-50, where the bad window contains distressed channel frequencies having an unacceptable level of interference.);

  determining a desired frequency type based on a frequency sequence (column 3 lines 10-39, column 7 lines 34-46, column 10 line 57 – column 12 line

46, and Table 2A-2C, where 1, 2, 6-14, 16-18, and 20-23 of Table 2 are "good" channel frequencies or "good frequency type");

using an original hopping sequence to sample an original frequency in the frequency band (column 4 lines 41-62 and column 9 lines 23-28);

selecting the original frequency as an operating frequency when the original frequency is the desired frequency type (column 3 lines 1-26, column 7 lines 28-67, column 9 lines 5-50, and column 11 line 13 – column 12 line 39, where the desired frequency type is the "good" or "non-distressed" channel frequencies); and

mapping the original frequency to the desired frequency type when the original frequency is not the desired frequency type (column 3 lines 1-26, column 7 lines 28-67, column 9 lines 5-50, and column 11 line 13 – column 12 line 39, where the undesired frequency type is the "bad" or "distressed" channel frequencies that been stored or mapped in the "blacklist" or "bad" list (Fig.5 element 3636)).

- With regard claim 2, Mansfield further discloses using a frequency from the good window when the original frequency is not the desired frequency type, and the desired frequency type is a good frequency (column 3 lines 1-26, column 7 lines 28-67, column 9 lines 5-50, and column 11 line 13 – column 12 line 39).
- With regard claim 3, Mansfield further discloses using a frequency from the band window when the original frequency is not the desired frequency type, and the desired frequency type is a bad frequency (column 15 lines 4-29).

- With regard claims 5-6, Mansfield further discloses wherein the frequency sequence is defined as a number of channels of a first type, followed by a number of channels of a second type, such that the ratio of the number of channels of the first type to the number of channels of the second type is Q (1/Q) (Table 2A). Mansfield discloses the claimed invention except for determining a ratio of the good channels in the band to the bad channels in the band. It would have been an obvious matter of design choice to determine the ratio of the good channels in the band to the bad channels in the band from table 2A, wherein both bad channels and good channels have been listed in the channel blacklist table, since applicant has not disclosed that determines the ratio of the good channels in the band to the bad channels in the band solves any stated problem or is for any particular purpose and it appears that Mansfield's reference has already provided the information with respect to the ratio of the good channels in the band to the bad channels in the band from table 2.
- With regard claim 7, Mansfield further discloses wherein the first type is a good channel (Table 2A, where channels 1, 2, 6-14, 14-18 and 20-23 are "good" channel frequencies) and the second type is a bad channel (Table 2A, where channels 3-5, 15 and 19 are "bad" channel frequencies).
- With regard claim 8, Mansfield further discloses wherein the first type is a bad channel (Table 2A, where channels 3-5, 15 and 19 are "bad" channel frequencies) and the second type is a good channel (Table 2A, where channels 1, 2, 6-14, 14-18 and 20-23 are "good" channel frequencies).

- With regard claim 9, Mansfield further discloses

  sampling a plurality of channels in the frequency band (column 4 lines 41-62 and column 9 lines 23-28);

  identifying each channel in the plurality of channels as a good channel or a bad channel as a function of a predetermined factor (column 9, lines 23-50); and

  assigning the good channels to a good window and the bad channels to a bad window by using an adaptive hopping scheme (column 7, lines 34-46, column 11 line 14 – column 12 line 45, column 9 lines 23-50, and column 18 lines 60-61).

- With regard claim 10, Mansfield further discloses wherein sampling the plurality of channels samples all channels available to a network (column 4 line 63-67 and column 9 lines 23-28).

- With regard claims 11 and 12, Mansfield further discloses a blacklist maintenance algorithm 40 by using the signal strength indicator (RSSI) to compare with a threshold to indicate the significant interference channel as "bad" or distressed, otherwise as "good" (column 9, lines 5-15 and lines 23-50).

  Mansfield does not disclose expressly wherein the good/bad channel is defined as a channel having at least (less than) a predetermined Quality Level of Service (QLS).

  At the time the invention was made, it would have been to a person of ordinary skill in the art to choose QLS to compare with a threshold to indicate the significant interference channel as "bad" or distressed, otherwise as "good" within the blacklist algorithm 40. Applicant has not disclosed that wherein the good

channel is defined as a channel having at least a predetermined Quality Level of Service (QLS) provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the good channel is defined as a channel having at least a predetermined signal strength indicator (RSSI) because any predetermined factor, such as the signal to noise ratio (SNR), Quality Level of Service (QLS), or signal strength indicator (RSSI) used to indicate the receiving signal quality can be properly used to compare a threshold in order to determine a "good" or "bad" channel. Therefore, it wou"d have been obvious to one of ordinary skill in this art to modify Mansfield's blacklist algorithm 40 to obtain the invention as specified in claims 11 and 12.

- With regard claim 13, Mansfield further discloses wherein each window has an even number of slots to which the channels may be assigned (see G in Table 2A and B in Table 2C).
- With regard claim 16, Mansfield further discloses wherein using a frequency comprises: using all channels in the good window before using any channel in the bad window (column 11 line 14 – column 12 line 39).

Allowable Subject Matter

4. Claims 17-20 are allowed.

5. Claims 4, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

7. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang
Examiner
Art Unit 2634

Ted M. Wang

KEVIN BURD
PRIMARY EXAMINER